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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/399,729	09/20/1999	BRIAN YANG	EM/YANG/4998	2597

7590 06/25/2008  
BACON & THOMAS  
625 SLATERS LANE  
4TH FLOOR  
ALEXANDRIA, VA 22314

EXAMINER
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LEE, PING

ART UNIT	PAPER NUMBER
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2615

MAIL DATE	DELIVERY MODE
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06/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/399,729	<b>Applicant(s)</b> YANG ET AL.	
	<b>Examiner</b> Ping Lee	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 17-36 is/are pending in the application.
- 4a) Of the above claim(s) 3,22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 17-21 is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 31-36 is/are rejected.
- 7) ☒ Claim(s) 5-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The status identifier for claim 28 is incorrect. Claim 28 is one of the non-elected claims.

### *Election/Restrictions*

2. Claim 3 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/14/03.

For examination purpose, claims 3 and 22-28 are withdrawn from consideration. Claims 1, 2, 4-9, 17-21 and 31-36 are examined.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

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directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claim 1, 2, 4 and 31-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Chester (US006014055A).

Regarding claims 1, 2 and 4, Chester discloses a driving method of speaker for converting digital sound data into corresponding driving signals to drive said speaker, the driving method comprising the steps of:

dividing said digital sound data into at least two data groups, including a first data group (L MSB's) and a second data group (K LSB's);

modulating said first data group (L MSB's) into a first driving signal (by 37 to generate PWM), wherein the magnitude of said first data group is represented by pulse width of said first driving signal;

converting said second data group (K LSB's) into a second driving signal according to said second data group and under the control of a second input signal (ENABLE from 37) based on said first driving signal (ENABLE is based on the first driving signal; col. 7, lines 51-56), wherein the magnitude of said second data group is represented by pulse height of said second driving signal;

outputting a speaker driving signal according to at least said first driving signal and said second driving signal (by the output from 77); and

driving said speaker (48) according to said speaker driving signal.

Regarding claims 31-33 and 36, Chester discloses a driving circuit for generating a plurality of driving signals according to a plurality of digital signals (32), each of the digital signals including a plurality of bits and representing one value, the driving circuit generating a first driving signal of the plurality of driving signals according to a first digital signal of the plurality of digital signals, the driving circuit comprising:

- a pulse height modulation circuit (43) for generating a first part of the first driving signal according to the first digital signal (to 77);

- a pulse width modulation circuit (37) for generating a second part of the first driving signal according to the first digital signal (to 77); and

- a node ( output of 77) coupled to the pulse height modulation circuit and the pulse width modulation circuit for outputting the first driving signal according to the first and second parts of the first driving signal;

wherein a waveform of the first part of the first driving signal is different from a waveform of the second part of the first driving signal in at least one of pulse height and pulse width such that a waveform of the first driving signal is discontinuous (PWM from 77 is a discontinuous waveform formed by many square pulses).

Regarding claim 34, the claimed “a number of levels in pulse width” read on the pulse width provided by PWM at the output of 77.

Regarding claim 35, the claimed “ a number of levels in pulse height” read on two levels provided by PWM at the output of 77.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 9 and 31 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

6. Claims 17-21 are allowable over the prior art in the record.

7. Claims 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ping Lee/  
Primary Examiner, Art Unit 2615

pwl